

**REMARKS**

By the present amendment, Claims 1-17 and 22 are canceled without prejudice or disclaimer of the subject matter described therein.

Claims 26-37 have been added. Claim 26 recites the subject matter of Claim 22, which has been indicated as allowable, rewritten in independent form. New Claims 27-32 depend from new Claim 26 and recite features described in original Claims 19-21 and 23-24. Claims 33-37 depend from elected Claim 25, describing embodiments of the device manufactured according to the method of Claim 18 further comprising features previously recited in original Claims 2-6. Support for new Claims 26-37 can be found throughout the specification and the claims as originally filed.

No new matter has been introduced by way of the above amendments. Applicants reserve the right to file a continuation or divisional application on subject matter canceled by way of this Amendment.

**Election**

The election of Group II, Claims 18-25, has been acknowledged. Claims 1-17 were withdrawn from consideration. Claims 1-17 have been canceled by the present amendment without prejudice or disclaimer of the subject matter described therein. New Claims 26-37 are directed to the elected invention.

**Rejection under 35 U.S.C. § 102**

Claims 18-21 and 23-25 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,265,315 ("Hoisington"). The reasons for the rejection are set forth in numbered paragraphs 2-9 on pages 2-3 of the Official Action. The rejection is respectfully traversed.

Anticipation under § 102 requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim. *See, e.g., Carella v. Starlight Archery*, 231 U.S.P.Q. 644, 646 (Fed. Cir. 1986); *Lewmar Marine Inc. v. Barient, Inc.*, 3 U.S.P.Q.2d 1766, 1767 (Fed. Cir. 1987); *see also*, M.P.E.P. § 2131. However, Hoisington does not disclose or suggest all of the steps of the presently claimed methods, or the claimed fluid vaporizing devices made by such methods.

Claim 18 recites "A method of manufacturing a fluid vaporizing device comprising the steps of: (a) providing a fluid passage in a body, the fluid passage having an inlet opening and an outlet opening; and, (b) forming a tubular heater by depositing a thin resistive film inside said fluid passage such that the film lines all or part of the length of the passage; the heater being operable to volatilize fluid in the passage by passing an electrical current through the film." Claims 19-21 and 23-25 depend from Claim 18, and therefore incorporate all the features of Claim 18.

In numbered paragraph 5 of the Official Action, it is alleged that "Hoisington teaches a method of [making a] fluid vaporizing device (the fluid being ink) comprising the steps of providing a fluid passage 30 in a body having an inlet 32, and outlet 31 and

forming a tubular heater 18, the heater being operable to volatilize fluid in the passage by passing an electrical current through the film (col.6, line 50-51)." The text cited in this assertion appears in Claim 13 of Hoisington, reciting, "A method according to Claim 9 including forming a thin-film heater for the ink jet head on the substrate." *See* Hoisington at column 6, lines 50-51.

Thus, the Official Action alleges that the feature of the ink jet head disclosed by Hoisington identified by reference numeral 18 is a tubular heater. However, the feature identified by reference numeral 18 in Hoisington is a thin-film piezoelectric transducer which undergoes "bending" in response to "a given applied voltage . . ." *See, e.g.,* Hoisington at column 3, lines 37-46 and column 4, line 49. The thin-film piezoelectric transducer of Hoisington is formed on a flat crystal substrate, prior to the formation of any fluid chamber or passage. *See, e.g., Id.* at column 3, line 37 to column 4, line 4. The thin-film piezoelectric transducer is not a heater formed by depositing a thin resistive film as recited in Claim 18.

Thus, in contrast to the combination of features recited in Claim 18, the thin-film piezoelectric transducer of Hoisington is not a tubular heater. Instead, the transducer of Hoisington undergoes bending in response to applied voltage to eject drops of ink from the orifice 31. Moreover, the transducer is not formed by depositing a thin resistive film inside a fluid passage such that the film lines all or part of the length of the passage. There is no teaching or suggestion in Hoisington of the combination of steps recited in Claim 18 or of a fluid vaporizing device made by such steps as recited in Claim 25.

Although transducer 18 is not a heating element, it should be noted that Hoisington discloses that the ink jet head can have a heating element 41 attached. *See* Hoisington at column 5, lines 18-21. However, in contrast to the method recited in Claim 18, the heating element 41, is not tubular and is not formed inside a fluid passage. Instead, the Hoisington heating element is shown as a flat element on the surface of the ink jet head and located away from the ink chambers or any fluid passage. *See Id.* at FIG. 2. There is no suggestion in Hoisington to form a tubular heating element inside of a fluid passage.

In view of the foregoing, it is submitted that Hoisington does not teach or suggest the method of Claim 18 nor does Hoisington teach or suggest a fluid vaporizing device, made by the method of Claim 18, as recited by Claim 25.

Claim 19 recites that the depositing step of Claim 18 "comprises introducing a metal in solution, suspension, or dispersion in the flow passage and depositing metal on the interior of the passage." Claim 20 recites that the depositing step of Claim 18 "comprises introducing a solution containing a platinum salt into the fluid passage, depositing platinum and heating the deposited platinum." Claim 23 recites that the depositing step of Claim 18 " comprises: (a) coating the interior of the passage with a layer of metal powder, salt, or oxide in solution, suspension, or dispersion; and, (b) heating the layer to a temperature sufficient to convert the layer to a thin metal film." Claim 24 recites that the depositing step of Claim 18 "comprises: (a) coating the interior of the passage with a metal salt solution; and, (b) heating the passage to a temperature sufficient to reduce the deposited material to a

thin metal film." Hoisington does not disclose or suggest forming a tubular heater by the methods defined in Claims 19-24.

Further, Claim 21 recites the method of Claim 18, further comprising the step of forming conductive contacts electrically connecting the exterior of the body to the interior of the passage; the contacts being operable to supply an electrical current to the heater and wherein the contacts may be formed before, after, or concurrently with the formation of the heater. Hoisington does not teach or suggest forming conductive contacts connecting the exterior of the body to the interior of a fluid passage.

For at least the foregoing reasons, all claims are patentable over Hoisington. Accordingly, withdrawal of the rejection of Claims 18-21 and 23-25 under 35 U.S.C. § 102(b) is respectfully requested.

### **CONCLUSION**

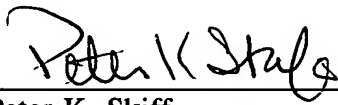
In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that prosecution of this application may be expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: August 22, 2003

By:   
Peter K. Skiff  
Registration No. 31,917

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620